

What is claimed is:

[c1] 1. A method of forming a film with a tapered edge in an electronic device, comprising:

providing a substrate;

forming a first film on the substrate;

forming a second film on the first film, the first film having an etch rate that is different from an etch rate of the second film;

forming an etching mask on said second film; and

etching the first and second films using the etching mask to form a resultant film having a tapered edge.

[c2] 2. The method of claim 1, wherein the second film is a disappearing mask layer for the first film, gradually exposing the first film to an etchant so as to induce a tapered edge which slopes to the substrate.

[c3] 3. The method of claim 2, further comprising depositing at least one overlaying layer on the first film, the tapered edge ensuring that said at least one overlaying layer is continuous at a junction of the first film with the substrate.

[c4] 4. The method of claim 1, wherein said first film includes Al and said second film includes Ti.

[c5] 5. The method of claim 1, wherein the etch rate of said second film is faster than the etch rate of said first film.

[c6] 6. The method of claim 2, wherein the angle of taper is controlled based on the relative etches rates of the first and second films.

[c7] 7. The method of claim 1, wherein said resultant film after etching is the remaining first film, said first film being a formed bottom electrode of the electronic device.

[c8] 8. A method of forming a electronic device, comprising:

- (a) providing a substrate;
- (b) forming a first film on the substrate;
- (c) forming a second film on the first film, the first film having an etch rate that is different from an etch rate of the second film, the first and second films to be used to form a bottom electrode of the electronic device;
- (d) forming an etching mask on said second film;
- (e) etching the first and second films using the etching mask to form the electrode with a tapered edge;
- (f) depositing a overlaying material on the formed electrode; and
- (g) forming a top electrode on said overlaying material by repeating steps (a) to (e).

[c9] 9. The method of claim 8, wherein the second film is a disappearing mask layer for the first film, gradually exposing the first film to an etchant so as to induce a tapered edge which slopes to the substrate.

[c10] 10. The method of claim 8, wherein said tapered edge ensures that the overlaying layer and any subsequent layers deposited thereon are continuous at a junction of the electrode with the substrate.

[c11] 11. The method of claim 8, wherein said first film includes Al and said second film includes Ti.

[c12] 12. The method of claim 8, wherein the etch rate of said second film is faster than the etch rate of said first film.

[c13] 13. The method of claim 9, wherein the angle of taper is controlled based on the relative etches rates of the first and second films.

[c14] 14. The method of claim 8, wherein the overlaying layer is composed of piezoelectric.

FOIA b 7 - EXEMPT